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NORTHGATE EXPLORATION LIMITED



ANNUAL REPORT 1968





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The Tynagh Mines Concentrator, County Galway, Ireland

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OFFICERS

Patrick J. Hughes
President

Robert E. Fasken
Executive Vice President

Sylvester P. Boland
Vice President of Finance

Evan W. T. Gill
Vice President of Corporate Affairs

Matthew Gilroy
Vice President

Murray K. Pickard
Vice President of Operations

George T. Smith
Vice President and Counsel

G. Warren Armstrong
Secretary

John A. Palmer
Treasurer

DIRECTORS

G. Warren Armstrong	-	-	-	-	-	-	-	-	-	Orono, Canada
<i>Barrister and Solicitor</i>										
Dr. Duncan R. Derry	-	-	-	-	-	-	-	-	-	Port Credit, Canada
<i>Geologist, President, Duncan R. Derry Limited</i>										
*Robert E. Fasken	-	-	-	-	-	-	-	-	-	Port Credit, Canada
<i>Business Executive</i>										
Matthew Gilroy	-	-	-	-	-	-	-	-	-	Dublin, Ireland
<i>Business Executive</i>										
Patrick J. Hughes	-	-	-	-	-	-	-	-	-	Dublin, Ireland
<i>Business Executive, Director, Allied Irish Investment Bank Limited</i>										
*Dr. William F. James	-	-	-	-	-	-	-	-	-	Toronto, Canada
<i>Geologist, Partner, James, Buffam & Cooper</i>										
John K. McCausland	-	-	-	-	-	-	-	-	-	Toronto, Canada
<i>Investment Dealer, Vice President and a Director, Wood Gundy Securities Limited</i>										
*George T. Smith	-	-	-	-	-	-	-	-	-	Toronto, Canada
<i>Barrister and Solicitor, President, Siscoe Mines Limited</i>										
George M. Wilson	-	-	-	-	-	-	-	-	-	Toronto, Canada
<i>Investment Dealer, Chairman and a Director, Equitable Securities Canada Limited</i>										

*Members of the Executive Committee

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STOCK EXCHANGE LISTINGS

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REGISTRAR AND TRANSFER AGENTS

Charter Consolidated Limited, London, England
Crown Trust Company, Toronto, Canada
The Bank of New York, New York City, New York, U.S.A.

SHAREHOLDERS' AUDITORS

Thorne, Gunn, Helliwell & Christenson, Toronto, Canada

AUDITORS IN IRELAND

Griffin, Lynch & Co., Dublin, Ireland

BANKERS

The Toronto-Dominion Bank, Toronto, Canada
The Royal Bank of Ireland, Dublin, Ireland

SOLICITORS

Fasken & Calvin, Toronto, Canada
Whitney, Moore & Keller, Dublin, Ireland
Olan, Murphy, Manuel & Lynch, New York, U.S.A.

RESEARCH DIRECTOR

A. Garfield Heyes





PRESIDENT'S REPORT TO THE SHAREHOLDERS

Nineteen Sixty-Eight was a year of transition and expansion, during which your company emerged from its role as essentially a one-mine operation into a well integrated mining, exploration, investment and holding corporation.

This was the result of being in a position to utilize our financial resources following the retirement of funded debt at the end of 1967 — in itself somewhat of an achievement in that income from our Tynagh Mine in the approximate two year period from the commencement of operations late in 1965, retired \$12,438,000 of funded debt, plus interest charges totalling \$1,624,208.

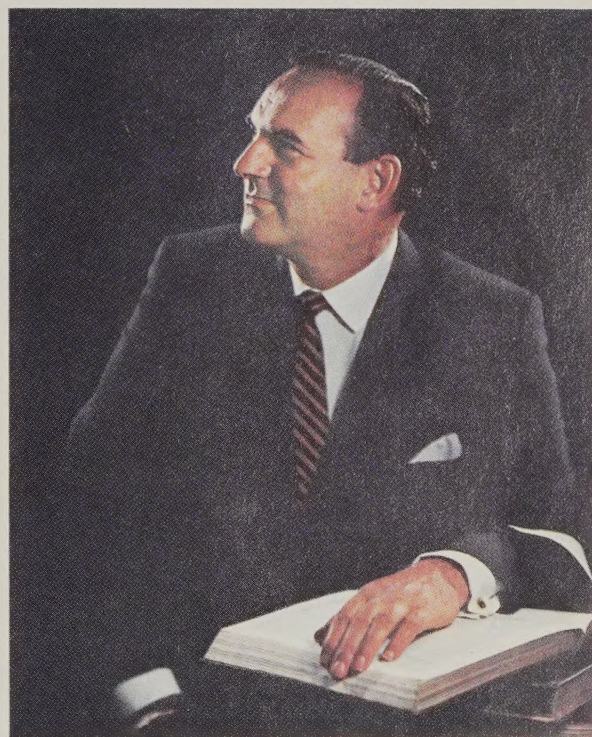
Nineteen Sixty-Eight was also the year in which regular dividend payments were initiated, and, including the payment to be made on June 30, 1969, the accumulated disbursement to that date exceeds \$4 million.

More important, we have embarked upon a policy of broadening our corporate horizons through the acquisition of equity interests in four separate mining corporations, putting to effective use the funds being generated by the Tynagh Mine and laying the foundation for the perpetuation of this organization.

In the report to shareholders covering operations for the nine month period ended September 30, 1968, we disclosed the acquisition of a 23% and 31% interest, respectively, in Westfield Minerals Limited and Silver Eureka Corporation. Quite recently, we have been able to announce two further such acquisitions, a 21% interest in Western Mines Limited, and a 26% interest in Mymar Mining & Reduction Limited.

We have also acquired a 51% interest in Smelter Corporation of Ireland Limited whose corporate objective is the establishment of a base metal smelting operation in the Republic of Ireland.

Each of these acquisitions was preceded by exhaustive investigations, not only of the investment calibre and growth potential, but also of the opportunities for participation in well delineated exploration projects. Both Westfield Minerals Limited and Silver Eureka Corporation are companies with wide international mining interests, and between them have substantial ownership of an operating gold mine and smelting complex in France.



Patrick J. Hughes
President of Northgate Exploration Limited
and Chairman of the Board, Irish Base Metals Limited

The numerous and diversified interests of these latter two companies are too lengthy for adequate description in this commentary. The more important of the projects in which these two companies have interests are described in appropriate sections of this Annual Report.

The very recent acquisition of the approximate 21% interest in Western Mines Limited provides your company with a participation in a producing copper-lead-zinc mine in Canada. The evaluation of our mining consultants, including the exploration potential, justified the investment of over \$3 million.

The situation of Western Mines Limited is not unlike that of our Company during its initial two years of operation in that the diversion of funds to retire debt necessarily restricted what is unquestionably the cornerstone of any mining enterprise — exploration and development of forward ore reserves.

Our investigations of Western Mines Limited indicate an excellent potential for the discovery and development of additional ore reserves, both in regard to the existing producing property as well as the other and still largely unexploited properties held by this company. We consider this a most promising investment with far reaching implications in exploration potential.

The acquisition of the substantial interest in Mymar Mining & Reduction Limited brings to our organization a participation in iron ore mining and the reduction of iron ore concentrates in Canada. The start-up of operations of this complex is scheduled for mid-1970. Your Company will have management control of Mymar Mining & Smelting Limited.

The year 1968 also saw our associate company, Gortdrum Mines Limited, successfully launched as a copper-silver producer and now preparing to add to its product mix another valuable metal — mercury. The mercury extraction facility at the Gortdrum Mine is scheduled to commence tune-up operations during June of this year.

Thus in the span of approximately one year, we have moved from the position of a single mine operation into an organization with interests in three additional producing mines, plus another scheduled to commence within the next 12 months, covering a rather expansive spectrum of metals — iron, lead,

zinc, copper, silver, mercury, gold, together with by-products such as bismuth, cadmium, barites, etc.

Another very important facet of 1968 developments is that we have established a foothold in several countries, thereby supplementing the already considerable exploration programs in the Republic of Ireland and Canada, into a widespread international search for metals. If we can equate effort and expense, and technical competence to exploration results, these long term programs could be most rewarding.

During the past year we have initiated basic exploration projects in Ireland perhaps unmatched in scope by any other individual company since Ireland's mineral renaissance in the late 1950's. The exploration tools and techniques, and the knowledge gained from more than a decade of active exploration in this country, are being applied with increasing vigor.

In 1968 we carried out airborne surveys employing electromagnetic, magnetic and induced polarization, covering some 450 square miles of favorable geological areas. This resulted in the delineation of 24 specific targets for follow-up ground exploration and a further 51 targets of perhaps lesser magnitude, but worthy of further investigation. In straight 'outside' exploration we completed some 6,000 feet of diamond drilling, substantially short holes testing targets established by conventional ground exploration methods.

In the Republic of Ireland, the total of prospecting licences held, and those for which applications have been made at the end of 1968, were 75 and 29 respectively. These licences and licence applications cover a combined area of some 1,300 square miles. Some of these prospecting licences are in joint venture with associated companies which, as a group, are foremost among the holders of such licences in Ireland. During 1968, your Company's expenditures for exploration, principally in Ireland, amounted to nearly a half million dollars. We are now mounting even broader exploration programs and expanding these efforts into other countries.

In the vicinity of the Tynagh Mine, which is centrally located along the approximate nine miles of the main fault system, several targets are scheduled for test during the current year. Exploration drilling to probe the possible westerly extension of the

Tynagh deposit is continuing. Drill availability was a limiting factor in this program during the past year.

At the Tynagh Mine itself, we have experienced still another successful and profitable operating year, as evident in the financial results contained in this Report. Cash flow for 1968 amounted to \$10,279,000 equal to \$2.05 per issued share, compared to \$9,695,000 or \$1.90 per share the previous year. Consolidated net income was \$8,346,000 equal to \$1.67 per share compared to \$7,606,000 or \$1.52 per share for 1967.

Present mining schedules indicate a likely comparable operation for 1969, with a possible increment in terms of metal prices. One of the important developments during the first quarter of 1969 was the successful plant-scale treatment of the complex high grade zinc oxide ore. As shown in the Summary of Open Pit Ore Reserves there is an estimated 479,500 tons of zinc oxide ore grading an average 20% zinc together with recoverable quantities of lead and silver.

During 1968 we also embarked upon the pilot production of barites. Metallurgical tests in connection with the secondary recovery of the lead, silver and copper contained in the sands tailings are continuing.

We have now almost completed the driving of the 3,300 foot decline tunnel into the primary sulphide orebody underlying the open pit to enable a more detailed evaluation of grade and tonnage expectations, together with the planning of the mining and ore treatment procedures. Some underground diamond core drilling has been completed with satisfactory results.

It is of interest to note that the gross value of metal production since the commencement of operations late in 1965 to the end of March, 1969, amounted to approximately \$75 million. Metals contained in concentrates produced in this same period approximate 373 million pounds of lead, 191 million pounds of zinc, over 17 million pounds of copper, and 5.3 million ounces of silver.

We are well aware of the keen interest on the part of our many shareholders resident in The United States of America regarding the plans for listing of the company's shares on a major stock exchange

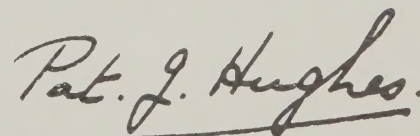
in the United States. Such listing will require the approval of the stock exchange and the registration of the shares with the United States' Securities and Exchange Commission. In this connection we can now report that discussions are in progress between the Commission and the Company's legal counsel.

As mentioned in the Informational Circular accompanying the Notice of the Annual Meeting, shareholders will be asked to vote on a special resolution approved by the Board of Directors to increase the authorized capital of the Company from \$6,000,000 to \$10,000,000 by creating an additional 4,000,000 shares with a par value of \$1.00 each. While no immediate issuance of these shares is contemplated, they will be available for further acquisitions or for financing additional expansion and diversification of the Company's activities.

The market value of shares held in associated companies at the year end, taken at recent market quotations (on The Toronto Stock Exchange and the OTC market) approximates \$12 million, an appreciable enhancement from original cost. The subsequent acquisition of an equity interest in Western Mines Limited, similarly valued at recent market quotations, would represent an additional value close to \$4 million.

Another special resolution of the Board of Directors, which is subject to the approval of Shareholders and the regulatory authorities having jurisdiction, is the creation of an employees' stock option plan covering a total of 250,000 shares with options exercisable over a five-year period. The stock options, extended to upper and intermediate levels of personnel, are designed to maintain the present nucleus of management and technical staff, and attract a similar calibre of additional employees.

On behalf of your Directors, I again express appreciation for the loyal and effective work of our technical staff and all employees of the Company which in combination have contributed greatly to the success of our organization.



President.

June 4, 1969.

REPORT ON OPERATIONS

PRODUCTION SUMMARY



	1968	1967	1966
Tons of ore treated	709,913	703,511	545,693
Tons of lead concentrates	93,625	105,886	64,541
Tons of zinc concentrates	30,383	42,215	26,393
Tons of bulk concentrates	57,942	42,884	30,630
Total tons of concentrates	181,950	190,985	121,564
*Metals contained in concentrates:			
Lead — pounds	129,500,000	131,500,000	84,154,000
Zinc — pounds	69,000,000	79,500,000	48,015,000
Copper — pounds	5,100,000	6,600,000	3,485,000
Silver — ounces	1,516,000	2,067,000	1,218,000

*Subject to smelter deductions

The tonnage of ore treated during 1968 totalled 709,913 tons, consisting of 380,749 tons of secondary sulphide ore and 329,165 tons of secondary oxide ores. The latter ore category included 76,042 tons of mixed oxides for which metallurgical recoveries were below those of the secondary sulphide and oxide ores.

The comparable figures for 1967 were a total of 703,511 tons treated, consisting of 408,395 tons of secondary sulphide ore and 295,116 tons of secondary oxide ores.

Apart from a nine day shutdown of the mill during August due to a walkout of certain of the tradesmen, and a five day shutdown during March owing to a strike of the employees of the Irish

Electricity Supply Board, the plant operated at capacity during 1968 with the exception of scheduled brief interruptions occasioned by the periodic changeover in the treatment of the sulphide, oxide and mixed oxide ores, and normal maintenance procedures. The loss of potential production of approximately 28,000 tons of ore during these two periods of shutdown of operations was to a large extent offset by periods during which the plant operated at above capacity.

A prime characteristic of the open pit reserves of the Tynagh Mine is the intricate mixture of secondary sulphide and oxide ores. Concentrate production, both in regard to type and total will naturally vary according to the different proportions of the various ore categories that are treated during any specific period.

The summary of production for 1968 shows a moderate reduction in the total tons of concentrates produced and a higher proportion of bulk concentrates compared with the 1967 results. This is principally due to the treatment during 1968 of the 76,042 tons of mixed oxides.

The high degree of efficiency that has and is being achieved in the treatment of this complex ore is a credit to the mining, milling and metallurgical departments. In retrospect, it is interesting to note that in the 1967 Annual Report the forecast production was the treatment of approximately 700,000 tons of ore with an anticipated output of 83,000 tons of lead concentrates, 37,000 tons of zinc concentrates, and 56,000 tons of bulk concentrates.

The present schedule planned for 1969 is the treatment of about 702,000 tons of ore consisting of approximately 248,740 tons of sulphide ore, 355,500 tons of oxide ore, 16,642 tons of zinc oxide ore (the amount treated during the first quarter), and 81,000 tons of mixed oxide ore.

The anticipated production is approximately 107,000 tons of lead concentrates, 22,800 tons of zinc concentrates, and 38,500 tons of bulk concentrates for a total of about 168,300 tons. The expected recovery of metals contained in the concentrates approximates 130 million pounds of lead, 40 million pounds of zinc, 3.6 million pounds of copper, and 1,600,000 ounces of silver. These totals are subject to smelter deductions.

The report of operating results for the three months ended March 31, 1969, mentioned the plant scale flotation test of the 16,642 tons of zinc oxide ore. This test was significant in that it effectively demonstrated that this material could be successfully treated with indicated satisfactory recoveries. As shown in the table of open pit ore reserves, there is a considerable quantity of zinc oxide ore of an estimated average grade of 20.0% zinc.

The treatment of the zinc oxide ore is scheduled to commence during 1970 and will necessitate certain modifications and additions to the existing treatment facilities.

Direct operating costs per ton of ore treated during 1968 averaged \$5.39 compared to \$5.49 per ton in 1967. Mining costs during the current year are expected to be moderately higher owing to the escalation of labor and materials costs.

FINANCIAL SUMMARY

The audited consolidated balance sheet, consolidated statement of income, retained earnings, and source and application of funds, together with the auditors' report for the year ended December

31, 1968, are included in this Report. The following is a condensed summary of the principal items with comparative figures for the two previous years.

	1968	1967	1966
Gross value of metal production	\$24,745,000	\$24,998,000	\$15,792,000
Net smelter value	16,118,000	15,441,000	10,245,000
Operating profit (before depreciation and amortization)	10,644,000	10,239,000	6,438,000
Exploration expenses	495,000	339,000	
	10,149,000	9,900,000	6,438,000
Non-operating revenue (net)	130,000	409,000	112,000
	10,279,000	10,309,000	6,550,000
Interest expense		614,000	1,010,000
Cash flow	10,279,000	9,695,000	5,540,000
Depreciation and amortization	1,933,000	*2,089,000	*1,757,000
Net income	\$ 8,346,000	\$ 7,606,000	\$ 3,783,000
Cash flow per issued share	\$ 2.05	\$ 1.90	\$ 1.11
Net income per issued share	\$ 1.67	\$ 1.52	\$ 0.76
Shares outstanding December 31	5,154,200	4,989,000	4,979,200

* Includes amortization of debt discount and expenses.

Nineteen Sixty-Eight was our first full year of debt-free operation following the redemption of funded debt at the year end of 1967. Under the provisions of the 1967 Finance Act of the Republic of Ireland, profits from mining operations at the Tynagh Mine, County Galway, operated by the company's wholly owned subsidiary, Irish Base Metals Limited, are exempt from all corporate income taxes for a period of 20 years from the commencement of production. Dividends from the subsidiary company, Irish Base Metals Limited, are not subject to withholding taxes to the government of the Republic of Ireland, nor are such dividends subject to Canadian corporation income taxes.

Dividends paid to shareholders during 1968, consisting of two semi-annual payments of 25 cents per share (in U.S. funds), totalled \$2,725,000. Dividend No. 3, payable on June 30, 1969, to shareholders of record June 12, 1969, will represent a further disbursement of approximately \$1,391,000, or a cumulative total of \$4,116,000.

As noted on the statement of source and application of funds, expenditures for additions to buildings, machinery and equipment at the minesite during 1968, amounted to \$614,000. Expenditures in connection with driving of the decline tunnel into the primary sulphide orebody underlying the open pit amounted to \$381,000 in

1968. The estimated cost to complete this phase of the program during 1969 is \$427,000, or a total of approximately \$800,000.

Included in the expenditures for additions to buildings, machinery and equipment at the mine-site during 1968 were the construction of a closed concentrate loading facility and installation of a second rotary dryer and necessary building. The latter new facility commenced operation during March of 1969.



Mobile jumbo drill entering tunnel adit

The purpose of the present underground program is to enable a more thorough evaluation of the grade and tonnage expectations, as well as the planning of the mining and ore treatment procedures.

According to present schedules, it is expected that production of ore from underground will commence in significant amounts in 1972, and that in 1973 this area of the mine will provide capacity tonnage for the treatment plant. This schedule is planned to coincide with the mining of the remaining open pit reserves, probably toward the end of 1972 or early in 1973.

Considerable underground diamond drilling has and is being done in conjunction with this under-

Left: Tynagh Mine open pit — service building for underground program centre foreground

Right: The 635-foot conveyor transporting ore from primary crusher to storage bins



UNDERGROUND DEVELOPMENT PROGRAM

Progress in the driving of the decline tunnel to provide access to the primary sulphide orebody underlying the open pit section of the Tynagh Mine has been satisfactory. Since the commencement of this program during June of 1968, drift advance to the end of May of 1969 totalled 2,499 feet, together with 223 feet in other headings and the equivalent of 795 feet in the development of diamond drilling stations.

The decline tunnel, which will be driven for much of its length through surface drill indicated primary sulphide zones, will extend for an ultimate length of 3,300 feet. Assuming the present rate of advance, the decline should reach its objective distance by mid-1969.

ground program. To the end of May of 1969, a total of 18,509 feet of underground core diamond drilling had been completed. Drift muck sampling is also being carried out as the decline is advanced into the primary ore zones. It is expected that this underground development program will be sufficiently advanced latterly in 1969 to enable a more detailed evaluation of the estimated grade and tonnage that will be mined from the primary sulphide orebody.

Depth possibilities below the presently defined bottom limits of the primary sulphide orebody have not yet been adequately explored. The underground workings will provide excellent sites from which the possible downward extension of the ore structures can be tested.

The underground workings will eventually be extended for a distance of about 2,500 feet east of the open pit area to explore and develop the new primary sulphide zone indicated by surface diamond drilling. The latter zone, discovered during the 1967-68 surface drilling program, is indicated to be similar in metal content characteristics to the primary sulphide orebody underlying the open pit section of the Tynagh Mine.

GENERAL EXPLORATION

Your company, through its wholly owned subsidiary, Irish Base Metals Limited, has extensive

delineation of numerous potential targets for follow-up ground exploration.

The North Tynagh fault zone with which the known ores of the Tynagh Mine are associated, remains the most important exploration target. The company holds or controls ground covering approximately nine miles of the fault zone. This fault has been closely investigated with surface diamond drilling only in the general vicinity of the open pit.

Your company expanded the scope of its exploration activities during 1968, initiating a preliminary program in Spain, and continuing its undertaking in Canada through the A. G. N. Syndicate in which it



exploration rights throughout geologically favourable areas of the Republic of Ireland. In addition to the ground covered by the mining lease which includes the Tynagh Mine, at the end of 1968, 75 prospecting licences were held and applications were pending on a further 29 licences. These licences and licence applications cover an aggregate area of some 1,300 square miles. Some of these licences are in joint venture with associated companies.

During June and August of 1968, some 2,500 line miles of combined electromagnetic, magnetic and scintillometer surveying were carried out, covering an approximate area of 450 square miles. This survey was conducted over selected areas in Counties Galway, Donegal and Mayo, resulting in the

has a one-third participating interest. In addition, as a result of the acquisition of equity interests in Westfield Minerals Limited and Silver Eureka Corporation, your company has recently embarked upon joint venture exploration programs in Australia.

During 1969, it is planned to further extend these joint venture efforts in conjunction with the several well delineated exploration projects in which Westfield Minerals Limited and Silver Eureka Corporation have interests.

Your company continues to hold several mining claims in Canada, including the 11 patented claims in the Uchi Lake Area, Ontario, where diamond drilling carried out several years ago indicated gold

values in the order of 0.28 ounce of gold per ton across a width of about eight feet, with intersections down to a vertical depth of 500 feet.

BARITE PLANT

The pilot plant for the recovery of barite commenced operation during November of 1968. Two types of barite have been produced, one suitable for drilling mud and the other of a higher grade. The feasibility of marketing this by-product is being investigated.

primary sulphide zones to be mined by underground methods.

The estimate of ore reserves mineable by open pit methods, calculated at December 31, 1968, is shown in the following table. After making allowance for the ore treated during 1968, the estimate of reserves mineable by open pit methods shows a net gain of 25,414 tons compared to the total reported at December 31, 1967. The revised estimate of ore reserves reflects some significant changes in the classification of ore into treatment categories, based on operating experience and the availability of more



As the barite content of the tailings represents a considerable portion of total volume of material and therefore a prime economic factor in any project for the treatment of tailings, it was considered essential that both the metallurgy and the feasibility of marketing this by-product be evaluated.

Test work in connection with the proposed retreatment project is continuing.

OPEN PIT ORE RESERVES

Pending completion of the current underground program, no changes have been made in the previously reported estimate of ore reserves of the

detailed information on geological and metallurgical characteristics.

As shown in the table, there are six categories of ore types mineable by open pit methods. The average grade of the open pit ore is not calculated because the various categories of ore will be generally mined and treated separately and the average grade of the combined ore would have little or no economic significance.

The footnotes appearing after the tabulation of ore reserves describe the reclassification of ore categories in terms of net gains or losses for each type, together with some comments pertaining to expected treatment results.

Summary of Ore — Open Pit and Stockpiles at December 31, 1968

Ore Type (Secondary)	Tons	Pb %	Zn %	Cu %	Ag ozs/ton
(1) Sulphide	279,670	11.2	10.4	0.08	3.25
Sulphide with cu.	245,940	18.2	6.4	0.66	5.42
(2) Lead oxide	344,280	13.5	1.5	0.17	2.97
Lead oxide with cu.	349,270	11.9	1.5	1.49	5.41
(3) Zinc oxide (in place)	344,750	1.7	20.0	tr.	0.74
Zinc oxide (stockpile)	135,000	1.5	20.0	tr.	0.50
(4) Silver oxide (high gr.)	92,150	2.5	0.2	0.37	13.26
Silver oxide (low gr.)	57,020	2.5	0.6	0.11	5.56
(5) Mixed oxide	307,070	11.6	7.6	0.16	3.21
Total Secondary Ore	2,155,150				
Ore Type (Primary)					
(6) Sulphide	326,320	4.5	5.2	tr.	3.05
Sulphide with cu.	314,780	8.8	1.9	1.27	3.81
Total ore reserves open pit and stockpile	2,796,250				

Open Pit Ore Reserve Reconciliation (1967-1968)

Tons Year End 1967	Tons Treated in 1968	Tons Year End 1968	Ore Type	Tons Gain/Loss
1,240,760	380,749	525,610	Sulphides	— 334,401
360,510	94,212	344,280	Lead oxide	+ 77,984
402,650	158,910	349,270	Lead oxide (with cu)	+ 105,530
433,060	4,000	479,750	Zinc oxides	+ 50,690
113,430	—	149,170	Silver oxides	+ 35,740
280,950	76,042	307,070	Mixed oxides	+ 102,162
653,390	—	641,100	Primary sulphide	— 12,290
3,484,750	713,913	2,796,250		+ 25,415

Notes Re Open Pit Ore Reserve Estimation

- Sulphide and sulphide with copper:** The loss in this category is 334,000 tons of which 40,000 tons is into waste rock. Most of the remaining 294,000 tons is reclassified into lead oxide or lead oxide with copper, and some into zinc oxide.
- Lead oxide and lead oxide with copper:** There is a gain of 183,530 tons in this category, all of which was previously classified as sulphide ore.
- Zinc oxide:** Prior to the plant scale flotation test of 16,642 tons during January of 1969, which effectively demonstrated that this material could be successfully treated, the zinc oxide ore was stockpiled as mined. There is a gain of 51,000 tons in this category, mostly from sulphide ore that was previously classified as an oxidized sulphide.
- Silver oxide, high and low grade:** There is a gain of 36,000 tons in this category, previously classified as low grade lead oxide with copper.
- Mixed oxides:** A total of 109,000 tons of decomposed primary ore (lead oxide or lead oxide with copper) was reclassified into the general ore

category of mixed oxide. This material is not the same as ore formerly described as mixed oxide of which approximately 200,000 remains after the treatment of 76,042 tons during 1968. Further testing on this new ore type will be required and it is considered it will be more profitable than ordinary mixed oxide. The net gain in this category is 102,000 tons.

- Primary sulphide:** There is a loss of 12,000 tons in this category, representing one low grade block of ore that has been omitted from reserves during 1968.

PERSONNEL

At the end of 1968, total technical staff and employees at the Tynagh Mine was 317 persons including 14 ore transport drivers. Of this number, 23 were employed in the underground program. The latter work force allocated to the underground program has subsequently been expanded to 28 which includes four employees recategorized from other departments, with the total employed at the mine on April 30, 1969, amounting to 323 persons. Two were added to the engineering staff during April of 1969.

NORTHGATE EXPLORATION LIMITED

Prior to and during 1968, and in the subsequent period to June 4, 1969, Northgate Exploration Limited made certain acquisitions representing equity interests in other companies. The resultant group of subsidiary and associated companies (with the number of shares held and the approximate percentage interest of total issued shares shown) is as follows:

ANGLO UNITED DEVELOPMENT CORPORATION LIMITED
(589,600 shares equal to 10%)

GORTDRUM MINES LIMITED
(1,191,424 shares equal to 31%)

IRISH BASE METALS LIMITED
(wholly owned subsidiary, operating the Tynagh Mine in Ireland)

SILVER EUREKA CORPORATION
(800,000 shares equal to 31%)

SMELTER CORPORATION OF IRELAND LIMITED
(3,468,000 shares equal to 51%)

WESTERN MINES LIMITED
(1,071,071 shares equal to 21%)

WESTFIELD MINERALS LIMITED
(964,200 shares equal to 24%)



The concentrator and smelter complex of Societe des Mines et Produits de Salsigne, Carcassonne, France, Westfield Minerals Limited and Silver Eureka Corporation have a combined approximate 90% interest in Mines et de Metallurgie de Cheni which in turn holds an approximate 48% interest in Salsigne



Idealized map depicting approximate locations of the principal properties in which NORTHGATE EXPLORATION LIMITED has an interest through subsidiary and associated companies (see accompanying text for detailed description)



AUSTRALIA



CANADA



DENMARK



FRANCE



GREAT BRITAIN



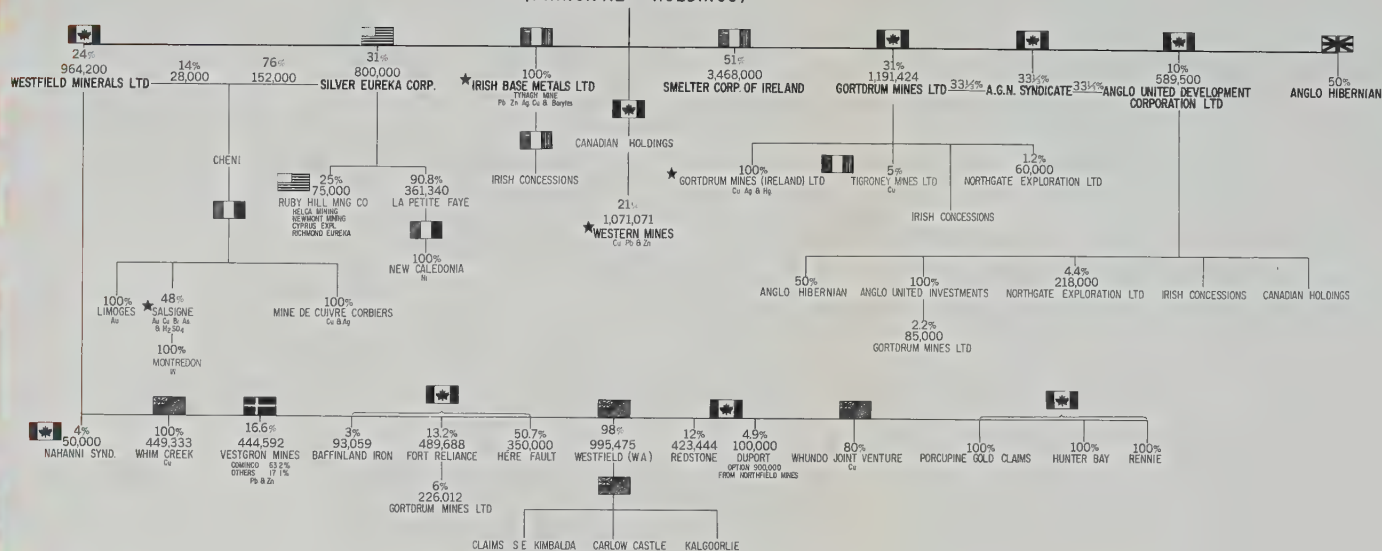
REPUBLIC OF IRELAND



UNITED STATES OF AMERICA

NORTHGATE EXPLORATION LIMITED

(PRINCIPAL HOLDINGS)



SYMBOLS

Ag	— SILVER
As	— ARSENIC
Au	— GOLD
Bi	— BISMUTH
Cu	— COPPER
Hg	— MERCURY
H ₂ SO ₄	— SULPHURIC ACID
Ni	— NICKEL
Pb	— LEAD
W	— TUNGSTEN
Zn	— ZINC

★ Denotes Producing Mines

ASSOCIATED COMPANIES

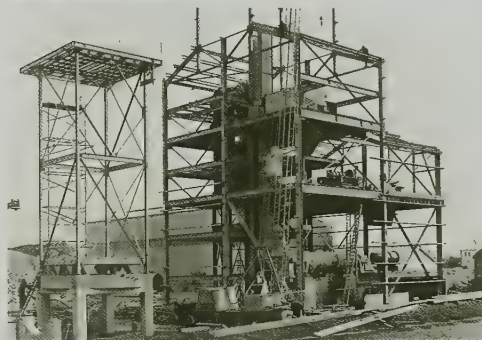
A brief description
of the principal
activities,
objectives and/or
interests of the
various companies in which
Northgate Exploration
Limited has an equity
interest (excluding
the wholly owned
subsidiary, Irish Base
Metals Limited)
appears on the
following pages

ANGLO UNITED DEVELOPMENT CORPORATION LIMITED

Essentially an exploration and investment holding company with mineral interests in Canada including an undeveloped gold property in the Northwest Territories and a 75% interest in a group of 100 claims (Project Circle) in the Rivet-Camsell Lakes Area of the Northwest Territories, plus other mineral rights and interest. In Ireland, Anglo United holds prospecting licences totalling approximately 400 square miles including some which are in joint venture with associated companies. The company holds 50% of Anglo Hibernian Exploration Limited, formed for the purpose of participating in petroleum exploration in the U.K. and other European areas, with Northgate holding the other 50% interest.

The company has a one-third participation in the A. G. N. Syndicate (the remaining two-thirds equally held by Northgate and Gortdrum Mines Limited). Anglo United and its wholly owned investment subsidiary hold 218,000 shares of Northgate Exploration Limited and 85,000 shares of Gortdrum Mines Limited.

Northgate's interest in Anglo United Development Corporation Limited is 589,500 shares equal to approximately 10% of the total issued shares.



Gortdrum Mine — Mercury plant under construction,

GORTDRUM MINES LIMITED

Through its wholly owned subsidiary, Gortdrum Mines (Ireland) Limited, operates a 1,500 ton per day copper-silver-mercury mine in Ireland. An extraction plant for the by-product recovery of mercury is scheduled to commence operation mid-1969.

The smelter value of metal sales for 1968 totalled \$2.7 million; net smelter value of sales for the three months ended March 31, 1969, amounted to \$2.1 million. Revenue from currently stockpiled concentrates containing mercury will accrue during the latter half of 1969 when the mercury extraction plant commences operation.

In addition to its mining operation at Tipperary, Ireland, Gortdrum Mines Limited is active in outside exploration holding 55 prospecting licences in Ireland, and a one-third interest in the A. G. N. Syndicate which holds mining claims in Canada. Gortdrum Mines Limited holds 60,000 shares of Northgate Exploration Limited.

Northgate's interest in Gortdrum Mines Limited is 1,191,424 shares equal to approximately 31% of the total issued shares. Northgate also has an option to purchase 150,000 of the capital stock of Gortdrum Mines Limited at \$4.00 per share, exercisable on or before December 1, 1972.

SMELTER CORPORATION OF IRELAND LIMITED

Smelter Corporation of Ireland Limited was incorporated under the laws of the Republic of Ireland late in 1968 with an authorized capital of 12,000,000 ordinary shares of which 6,800,000 shares have been subscribed and allotted at June 1, 1969.

The company was incorporated for the purpose of investigating the feasibility of the construction and operation of a zinc-lead smelter in the Republic of Ireland.

Northgate's interest in Smelter Corporation of Ireland Limited is 3,468,000 shares equal to 51%. In the event that S.C.I.L. requires further funds to complete its present feasibility studies, Northgate would be required to subscribe for additional shares, otherwise its present 51% equity interest would be diluted.

SILVER EUREKA CORPORATION

In addition to a 25% interest in Ruby Hill Mining Company, Silver Eureka has an approximate 76% interest in Mines et de Metallurgie de Cheni (Cheni) and a 90% interest in La Petite Faye Societe d'Exploitation (L.P.F.).

The most important asset of Cheni is its approximate 48% ownership of Societe des Mines et Produits Chimiques de Salsigne (Salsigne). Salsigne operates a gold mine and smelter complex in southern France near Carcassonne, deriving revenue from gold, silver, copper, bismuth, arsenic and sulphuric acid. Gold accounts for 50% of the value of production from this complex.

The plant has a capacity of about 500 tons of ore per day. During 1968, Salsigne treated 162,395 tons of ore with an average grade of 0.395 oz. of gold per ton. Production in 1968 amounted to 53,386 ozs. of gold, 197,274 ozs. silver, and 618.56 tons of copper together with by-products. Estimated net smelter returns were about \$US 4,363,300 and operating profit, before inventory adjustments, write-offs and taxes, about \$US 740,716.

At the year end, estimated probable and possible ore reserves at the Salsigne mine totalled 1,741,000 tons averaging about 0.40 oz. of gold per ton. Exploration and development is being accelerated at the mine and surface diamond drilling is in progress on adjacent ground held by Salsigne.

La Petite Faye (90% owned by Silver Eureka) is a French company owning claims totalling 3,300 acres in New Caledonia. These claims are adjacent to properties of two important mining companies which are presently exploring and developing potential nickel laterite deposits.

Northgate's interest in Silver Eureka Corporation is 800,000 shares equal to approximately 31% of the presently issued shares.

WESTERN MINES LIMITED

The company owns and operates a copper-lead-zinc mine at Buttle Lake, British Columbia, Canada, with a concentrator capable of treating up to 1,000 tons per day. The property consists of 168 claims and is comprised of three groups, the Lynx, Paramount and Price. The Lynx Group which is developed by an open pit, three adits and an internal shaft, is currently being mined by open pit and underground methods. The ore zone at the Paramount group is developed by two adits.

Net earnings for the fiscal year ended September 30, 1968, before deductions for debt repayment and non-cash write-offs, was \$4,644.00 equal to about \$0.97 per issued share. Net earnings for the six months ended March 31, 1969, amounted to \$1,286,000 equal to \$0.254 per issued share. Earnings were below normal expectations for the latter period due to adverse weather conditions requiring treatment of low grade ore from the stockpiled dump ore during January and February.



Western Mines' open pit with concentrator in background

Estimated proven and probable ore reserves reported by the company at September 30, 1968, totalled 1,286,000 tons averaging 2.0% copper, 0.7% lead and 7.9% zinc. The interim report for the six month period ended March 31, 1969, stated that although ore reserves have not been recalculated, it is estimated that new ore encountered in the pit and underground would be sufficient to replace ore treated during the six month period.

The previously outstanding bank loan of \$4 million was retired on March 15, 1969. The presently outstanding funded debt is \$7 million in debentures bearing interest at the rate of 6½% per annum.

The Report of the Annual Meeting of Shareholders held December 18, 1968, noted further exploration is planned at the Paramount group, on the Price group and north and west of the Lynx open pit, stating: "All three of these development projects are excellent exploration projects". Exploration and development has been somewhat restricted owing to debt retirement requirements. As a result of the recent underwriting of treasury shares by Northgate Exploration Limited, funds totalling \$1,050,000 have been provided, which sum is earmarked for exploration and development.

Northgate's interest in Western Mines Limited is 1,071,071 shares equal to approximately 21% of the presently issued shares.

WESTFIELD MINERALS LIMITED

Both directly, and indirectly through subsidiary, associated and other companies, Westfield Minerals Limited has widespread

exploratory and mineral interests in several countries, chiefly in France, Australia, Greenland and Canada.

The company has a present approximate 14% interest in Mines et de Metallurgie de Cheni. The most important asset of Cheni is its approximate 48% interest in Societe des Mines et Produits Chimiques de Salsigne which operates a gold mine and smelter complex in southern France near Carcassonne (see corporate profile of Silver Eureka Corporation for details).

In addition to the interests held by Cheni and Salsigne, Westfield Minerals Limited has an approximate 98% interest in Westfield Minerals (W.A.) N. L. which holds the Whundo property in northwestern Australia where diamond drilling has indicated a small lense of high grade copper which could be amenable to mining and transportation of ore for treatment at the nearby Whim Creek Mine plant.

Westfield Minerals also owns 100% of Whim Creek Consolidated N. L. whose interests in the northwestern part of Australia include the formerly operated Whim Creek Mine, equipped with a 200 ton per day mill, and an exploration concession of some 50 square miles. The Whim Creek Mine contains a possible 100,000 tons of oxide ore and potential sulphide ore below the second level. The company plans exploration to assess the ore potential by various exploratory methods.

Early in 1968, Whim Creek Consolidated N. L. granted an option to Australian Inland Exploration Company, a wholly owned subsidiary of Texas Gulf Sulphur Company, Inc., on the Mons Cupri property. TGS disclosed in its 1968 Annual Report that Australian Inland carried out extensive drilling on the property at Mons Cupri, and that airborne geophysical surveys were conducted in this general area, describing the area as having an interesting and favourable geological environment.

In a prepared statement released at the subsequent Annual Meeting of TGS, further information was presented relative to the drilling at Mons Cupri, indicating in excess of 15 million tons of primary material averaging approximately 1.0% copper, 4% combined lead-zinc and 1.5 ozs. silver per ton; and 15 million tons of additional material averaging about 0.65% copper, together with 6 million tons of secondary material averaging approximately 1.7% copper. The release further stated: "Metallurgical tests are being conducted and economic studies prepared. Due to the location of this area, it will take some time to determine accurately the commercial feasibility of this prospect".

Australian Inland has the right, but not the obligation, to exercise the option agreement at any time prior to December 31, 1970.

Subject to the payment of a balance of \$76,848 representing the amount payable on call in connection with the purchase of 90,060 shares, Westfield Minerals Limited will have an approximate 16.6% interest in Vestgron Mines Limited. The majority interest in Vestgron (63.2%) is held by Cominco Limited. Vestgron holds a concession in Greenland with indicated reserves of approximately 2.5 million tons of about 20% combined lead-zinc.

Westfield Minerals Limited also has other property interests; 100,000 shares of Duport Mining Company Limited; and an approximate 51% interest in Héré Fault Copper Limited. A minor (3%) interest is held in Baffinland Iron Mines Limited. Among the principal investments held by Westfield Minerals Limited at December 31, 1968, are 489,688 shares of Fort Reliance Minerals Limited, the latter company holding 226,012 the nearby Whim Creek Mine plant.

Northgate's interest in Westfield Minerals Limited is 964,200 shares equal to approximately 24% of the presently issued shares.

CONSOLIDATED BALANCE SHEET — DECEMBER 31, 1968

(with comparative figures at December 31st, 1967)

ASSETS

Current Assets

Cash	
Short term securities at cost plus accrued interest (approximate market value)	
Gold bullion at cost of U.S. \$35.32 per ounce	
Smelter settlements outstanding at estimated net realizable value (note 2)	
Concentrates on hand at estimated net realizable value (note 2)	
Accounts receivable	
Supplies at cost	
Prepaid expenses	

Shares in and Advances to Other Companies at cost less amounts written off (note 3)

Fixed Assets

Buildings, machinery and equipment at cost	
Land in Ireland at cost	
Mining claims in Canada	

Less accumulated depreciation (note 6)

Other Assets and Deferred Charges

Preproduction expenditures less amortization (note 6)	
Exploration expenditures in Canada and Ireland deferred	
Other deferred charges	

LIABILITIES AND SHAREHOLDERS' EQUITY

Current Liabilities

Bank loans	
Accounts payable and accrued liabilities	
Government royalty payable	
Accrued Irish income tax on bond interest	

Shareholders' Equity

Capital stock (note 5)	
Authorized — 6,000,000 shares of \$1 each	
Issued — 5,154,200 shares (1967 4,989,200 shares)	
Contributed surplus (note 5)	
Retained earnings	

NORTHGATE EXPLORATION LIMITED

(Incorporated under the laws of Ontario)

and its subsidiary company, Irish Base Metals Limited

1968	1967
\$ 240,000	\$ 307,000
2,773,000	216,000
1,063,000	
1,775,000	1,478,000
1,377,000	1,588,000
168,000	117,000
688,000	611,000
71,000	36,000
8,155,000	4,353,000
5,322,000	1,781,000
10,483,000	9,964,000
256,000	231,000
1,000	1,000
10,740,000	10,196,000
3,133,000	2,087,000
7,607,000	8,109,000
3,067,000	3,858,000
	61,000
440,000	72,000
3,507,000	3,991,000
24,591,000	\$18,234,000
1968	1967
	\$ 1,942,000
819,000	610,000
921,000	635,000
71,000	363,000
1,811,000	3,550,000
5,154,000	4,989,000
2,507,000	197,000
15,119,000	9,498,000
22,780,000	14,684,000
24,591,000	\$18,234,000

AUDITORS' REPORT

To the Shareholders of
Northgate Exploration Limited

We have examined the consolidated balance sheet of Northgate Exploration Limited and its subsidiary company, Irish Base Metals Limited, as at December 31, 1968 and the consolidated statements of income, retained earnings, contributed surplus and source and application of funds for the year then ended. Our examination of the financial statements of Northgate Exploration Limited (the parent company) included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances. With respect to the subsidiary company, Irish Base Metals Limited, of which we are not the auditors, we have carried out such enquiries and examinations as we considered necessary in order to accept for purposes of consolidation the report of its auditors.

In our opinion these consolidated financial statements present fairly the financial position of the companies as at December 31, 1968 and the results of their operations and the source and application of their funds for the year then ended, in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

THORNE, GUNN, HELLIWELL & CHRISTENSON,
Chartered Accountants.

Toronto, Canada
January 31, 1969

Approved by the Board:

R. E. FASKEN, Director.

G. T. SMITH, Director.

CONSOLIDATED STATEMENT OF INCOME**Year ended December 31, 1968**

(with comparative figures for 1967)

	1968	1967
Revenue		
Metal recovery, gross value	\$24,745,000	\$24,998,000
Deduct shipping, smelting and marketing expenses	8,627,000	9,557,000
	<u>16,118,000</u>	<u>15,441,000</u>
Operating Expenses		
Operating expenses other than items set out below	3,827,000	3,862,000
Administrative and general expenses	909,000	603,000
Government royalty	738,000	737,000
	<u>5,474,000</u>	<u>5,202,000</u>
Operating income before depreciation and amortization	<u>10,644,000</u>	<u>10,239,000</u>
Deduct		
Depreciation (note 6)	1,142,000	1,065,000
Amortization of preproduction expenditures (note 6)	791,000	779,000
	<u>1,933,000</u>	<u>1,844,000</u>
	<u>8,711,000</u>	<u>8,395,000</u>
Other Expenses		
Exploration	495,000	339,000
Interest on bonds and debentures and Irish income tax on bond interest		614,000
Amortization of debt discount and expenses		245,000
	<u>495,000</u>	<u>1,198,000</u>
	<u>8,216,000</u>	<u>7,197,000</u>
Add		
Interest earned and profit on sale of investments	130,000	242,000
Profit on Sterling currency devaluation and other exchange adjustments		167,000
	<u>130,000</u>	<u>409,000</u>
Net Income for the year (note 7)	<u>\$ 8,346,000</u>	<u>\$ 7,606,000</u>

CONSOLIDATED STATEMENT OF CONTRIBUTED SURPLUS**Year ended December 31, 1968**

(with comparative figures for 1967)

	1968	1967
Balance at beginning of year	\$ 197,000	\$ 167,000
Add premium on shares issued during the year (note 5) ..	2,310,000	30,000
Balance at end of year	<u>\$ 2,507,000</u>	<u>\$ 197,000</u>

**CONSOLIDATED STATEMENT OF RETAINED EARNINGS****Year ended December 31, 1968**

(with comparative figures for 1967)

	1968	1967
Balance at beginning of year	\$ 9,498,000	\$ 2,875,000
Net income for the year	8,346,000	7,606,000
	<u>17,844,000</u>	<u>10,481,000</u>
Deduct		
Dividends — 25¢ U.S. per share	2,725,000	
Amount written off — excess of cost of shares in subsidiary company over book value of underlying assets at date of acquisition		983,000
Balance at end of year	<u>\$15,119,000</u>	<u>\$ 9,498,000</u>

CONSOLIDATED STATEMENT OF SOURCE AND APPLICATION OF FUNDS**Year ended December 31, 1968**

(with comparative figures for 1967)

Source of Funds

	1968	1967
From operations		
Net income for the year	\$ 8,346,000	\$ 7,606,000
Add depreciation and amortization charged to income not requiring cash outlay	1,933,000	2,088,000
	<u>10,279,000</u>	<u>9,694,000</u>
Issue of shares (note 6)	2,475,000	40,000
Other sources	74,000	86,000
	<u>12,828,000</u>	<u>9,820,000</u>

Application of Funds

Additions to buildings, machinery and equipment	614,000	1,022,000
Underground mine development	381,000	
Purchase of shares in Gortdrum Mines Limited		1,064,000
Purchase of shares in Silver Eureka Corporation and Westfield Minerals Limited (note 6)	2,567,000	
Purchase of shares in other mining companies	975,000	49,000
Dividends to shareholders	2,725,000	
Reduction in non-current portion of long term debt ..		7,885,000
Other applications	25,000	38,000
	<u>7,287,000</u>	<u>10,058,000</u>
Increase (decrease) in working capital	<u>\$ 5,541,000</u>	<u>\$ (238,000)</u>

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — Year Ended December 31, 1968

1. Currency Conversion

Current assets and all liabilities of the subsidiary company are converted to Canadian dollars at December 31, 1968 at the rate of exchange of \$2.57 to £1 (Sterling) which approximates the rate prevailing at that date (December 31, 1967 \$2.60 to £1). Other assets and deferred charges, and the related depreciation and amortization charged to income, are converted at approximate rates prevailing when funds for the expenditures were provided. Other operating accounts have been converted at the average rate of exchange prevailing during each year.

2. Metal Prices

In computing the estimated net realizable value of smelter settlements outstanding and concentrates on hand at December 31, 1968, estimates of metal prices at the time of settlement in 1969 have been used as follows:

Lead	—	£105 per 2,240 lbs. (Cdn. \$.121 per lb.)
Zinc	—	£114 per 2,240 lbs. (Cdn. \$.131 per lb.)
Copper	—	£497 per 2,240 lbs. (Cdn. \$.570 per lb.)
Silver	—	U.S. \$1.96 per ounce (Cdn. \$2.11 per ounce)

3. Shares in and Advances to Other Companies

Shares at cost	1968	1967
1,191,424 Gortdrum Mines Limited (1967 1,177,124 shares) including 370,619 shares in escrow	\$1,701,000	\$1,635,000
589,500 Anglo United Development Corporation Limited (1967 99,500 shares)	405,000	61,000
800,000 Silver Eureka Corporation	1,383,000	
964,200 Westfield Minerals Limited (1967 33,000 shares)	1,196,000	12,000
Other shares, advances and participations at cost less amounts written off	637,000	73,000
	<u>\$5,322,000</u>	<u>\$1,781,000</u>

The quoted market value of the free shares in Gortdrum Mines Limited and of the shares in Anglo United Development Corporation Limited amounted to \$4,095,000 at December 31, 1968 and \$3,134,000 at December 31, 1967. However, because of the

number of shares held, the quoted market value is not necessarily indicative of their realizable value. The shares in other companies are not listed.

4. Contingent Liability

Pursuant to the guarantee of principal and interest on the first mortgage bonds of Gortdrum Mines (Ireland) Limited given by the company and its subsidiary company in 1966, the subsidiary company has advanced U.S. \$350,000 to assist in meeting the principal payment of U.S. \$700,000 and interest of U.S. \$260,000 due on the bonds on December 1, 1968. As at December 31, 1968 there were outstanding U.S. \$5,572,000 of the bonds.

5. Capital Stock and Contributed Surplus

During 1968 165,000 shares were issued at \$15 per share as consideration for 909,500 shares of Westfield Minerals Limited and 795,000 shares of Silver Eureka Corporation. The total issue value of \$2,475,000 is included in shares in and advances to other companies and of that amount \$165,000 was credited to capital stock and \$2,310,000 was credited to contributed surplus.

6. Depreciation and Amortization

Depreciation of fixed assets has been recorded at the rates set out below bearing in mind the expected useful life of the assets and the life of the estimated ore reserves.

Crusher plant	1/6	per annum
Mobile equipment	1/4	per annum
Employees' housing in Loughrea	nil	
Other buildings, machinery and equipment	1/11	per annum

Preproduction expenditures are being amortized over the estimated life of the open pit mine.

7. Income Taxes

No provision for Irish income taxes is required as income from the subsidiary company's mine at Tynagh is exempt from tax for twenty years from the date of commencement of production. Dividends from the subsidiary company are not subject to Canadian income taxes or to Irish withholding tax.

8. Remuneration of Directors and Senior Officers

Remuneration of the company's directors and senior officers (as defined by The Ontario Corporations Act) amounted to \$221,000 for 1968 and \$147,000 in 1967.

9. Re-Classification

The 1967 figures have been re-classified on the basis of the 1968 presentation.



IRISH BASE METALS LIMITED

BOARD OF DIRECTORS

G. W. Armstrong	Northgate Exploration Limited, Toronto Canada
W. Casper	Metallgesellschaft A.G., Frankfurt, Germany
A. de Jaer	Societe Generale des Minerais S.A., Brussels, Belgium
Dr. D. R. Derry	Duncan R. Derry Limited, Toronto, Canada
R. E. Fasken	Northgate Exploration Limited, Toronto, Canada
M. Gilroy	Northgate Exploration Limited, Toronto, Canada
P. J. Hughes	Northgate Exploration Limited, Toronto, Canada
Dr. W. F. James	James, Buffam & Cooper, Toronto, Canada
J. K. McCausland	Wood Gundy Securities Limited, Toronto, Canada
J. V. McParland	Tara Exploration & Development Co. Ltd., Dublin, Ireland
G. T. Smith	Northgate Exploration Limited, Toronto, Canada
M. Trebucq	Societe Miniere et Metallurgique de Penarroya S.A., Paris, France
G. H. White	The British Metal Corporation Limited, London, England
H. S. White	The Toronto-Dominion Bank, London, England
G. M. Wilson	Equitable Securities Canada Limited, Toronto, Canada

SUBSTITUTE DIRECTORS

Dr. B. S. W. Buffam	James, Buffam & Cooper, Toronto, Canada
P. Harrington	Dublin, Ireland
W. Horster	Metallgesellschaft A.G., Frankfurt, Germany
P. J. Lenihan	Athlone, Ireland
Michael McCarthy	Ballinasloe, Ireland
M. V. O'Brien	Dublin, Ireland
M. K. Pickard	Loughrea, Ireland
A. M. R. Sylvester	The British Metal Corporation Limited, London, England

OFFICERS

Patrick J. Hughes	Chairman of the Board
S. P. Boland	Secretary
Murray K. Pickard	General Manager

REGISTERED OFFICE

162 Clontarf Road, Dublin 3, Ireland

MINE OFFICE

Tynagh, County Galway, Ireland

